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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,813	02/12/2004	Rick L. Hubert	2002-0489.02	5832

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EXAMINER	
SOLOMON, LISA	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/777,813	HUBERT ET AL.	
	Examiner	Art Unit	
	Lisa M. Solomon	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 2A and 2B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 objected to because of the following informalities: in part (b) "the heater array". Claim 1 involves an active and an inactive heater array, it is unclear from the language which heater array the applicant is referring to. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6 and 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The metes and bounds of the claimed "effective to provide active heater array energy characteristics that improve ink bubble performance", claims 6 and 17 and "effective to a reduce current path resistance at the end of the active heater array", claims 13 and 18 cannot be ascertained.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Schulte et al. (6,512,284).

8. In regards to claim 1, a heater chip for an ink jet print head, the chip comprising: a substrate (32) having a device side including an active heater array (23) located on the device side having a plurality of active heater resistors (23) that may be placed in electrical communication with a driver circuit (40) for supplying electrical impulses to activate the heater resistors for printing, the active heater array terminating to define an end of the active heater array; and an inactive heater array (30) located adjacent to and extending away from the end of the active heater array; wherein the inactive heater array provides: (a) a region adjacent the end of the active heater array that is substantially planar, and (b) a plurality of current paths which reduce energy differences between heater resistors adjacent the end of the active heater array and other heater

resistors in the heater array [Column 2 lines 48-55, Column 3 lines 35-40; 50-52, and see Fig. 1].

9. In regards to claim 2, the heater chip, wherein the chip is configured for use with a top-shooter type print head.

10. The printhead structured in Schulte et al. (284') is known in the art as a top-shooter type printhead [See prior art not cited but considered pertinent].

11. In regards to claim 3, the heater chip, further comprising a nozzle plate (21) attached to the chip and having ink ejection nozzles (29) located at positions corresponding to the active heater resistors [Column 3 lines 35-40].

12. In regards to claim 4, the heater chip, wherein the inactive heater array (30) comprises one or more inactive heater resistors (33) [Column 2 lines 48-55].

13. In regards to claim 5, the heater chip, wherein the inactive heater array (30) comprises passivation (35), cavitation protection (36), and resistive layers (33) [Column 3 lines 48-53].

14. In regards to claim 6, a heater chip for an ink jet print head, the chip comprising: a substrate (32) having a device side including an active heater array (23) located on the device side with a plurality of active heater resistors (23) that may be placed in electrical communication with a driver circuit (40) for supplying electrical impulses to activate the heater resistors for printing, the active heater array terminating to define an end of the active heater array; and an inactive structure (30) located adjacent to and extending away from the end of the active heater array; wherein the inactive structure provides a region adjacent the end of the active heater array that is substantially planar,

and wherein the inactive structure is effective to provide active heater array energy characteristics that improve ink bubble performance [Column 2 lines 48-55, Column 3 lines 35-40;50-52].

15. In regards to claim 7, the heater chip, wherein the inactive structure (30) provides a plurality of current paths which reduces an energy difference between one or more active heater resistors adjacent the end of the active heater array and other heater resistors in the heater array [Column 2 lines 64-Column 3 line 10; lines 21-34].

16. In regards to claim 8, the heater chip, wherein the inactive structure (30) comprises one or more inactive heater resistors (33) [Column 2 lines 48-55].

17. In regards to claim 9, the heater chip, wherein the chip is configured for use with a top-shooter type print head.

18. The printhead structured in Schulte et al. (284') is known in the art as a top-shooter type printhead [See prior art not cited but considered pertinent].

19. In regards to claim 10, the heater chip, further comprising a nozzle plate (21) attached to the chip and having ink ejection nozzles (29) located at positions corresponding to the active heater resistors [Column 3 lines 35-40].

20. In regards to claim 11, the heater chip, wherein the inactive structure (30) comprises passivation (35), cavitation protection (36), and resistive layers (33) [Column 3 lines 48-53].

21. In regards to claim 12, an ink jet print head containing a heater chip according to claim 1 [Column 2 lines 48-53].

22. In regards to claim 18, the heater chip, wherein the inactive structure (30) is effective to reduce current path resistance at the end of the active heater array [Column 3 lines 21-34].

23. The method claims 13-17 are met in that the structure that is provided for in the steps is provided in the structure of the head chip in Schulte et al. (284') [See Fig. 1].

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Application Publication No. 2002/0101482 to Cook et al.

25. The background of this application, specifically paragraph 4, lines 7-19 cite the structure of a top-shooter type printhead as known in the art. This structure corresponds to the structure of the reference Schulte et al. (6,512,284) relied upon in the rejection of claims 2 and 9.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Solomon whose telephone number is (571) 272-1701. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMS
02/28/2006